

Personal Details

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GitHub: <https://github.com/sanghvirajit>
Portfolio: <https://sanghvirajit19.github.io/Portfolio/>



Research/ Work experience

- 10/2020 - current **Research Associate, Institute of Mathematics and Computer Science**
Universität Koblenz-Landau, Koblenz, Germany.
- **Successfully researched** and developed **C++** code to perform the **PDE constrained optimization** problem using multigrid methods.
 - Generated the **neural networks** from scratch in **Python** to understand the vanishing gradient problems.
 - Ongoing research to develop the code to solve **PDE constrained optimization** problem as a **machine learning problem** using **Automatic differentiation** and **SciPy optimization python library**.
- 09/2021 - current **Student Trainee, Machine Learning Bootcamp**
DataTalks.Club, Berlin
- Preparing the data and doing EDA, analyzing important features.
 - Developed **Customer churn prediction** model using machine learning algorithm **regression**, and deployed the models on the **AWS cloud service** by creating **Docker containers** and using **AWS Elastic Beanstalk**.
 - Developed **Credit risk analysis** model with **Decision Tree, XGboost, and random forest**, and deployed the models on the AWS cloud service by creating **Docker containers** and using **AWS Elastic Beanstalk**.
[Projects](#)
- 03/2021 - current **Technical writer and contributor**
Neptune.ai and Medium
- I write about Data science, machine learning and deep learning.
 - [Neptune.ai Blogs](#)
 - [Medium Blogs](#)
- 05/2020 - 09/2020 **Internship, Research and Development**
Simerics GmbH, Rottenburg am Neckar, Germany.
- **Developed Python library** for mixed timescale coupling using Python packages like **NumPy, Pandas, Matplotlib, and Seaborn**.
 - Successfully Implemented numerical Fluid-Structure Interaction (FSI) coupling algorithms for FSI coupling adapters in Python and **improved** the overall Simulation time by **10%**.
- 05/2019 - 11/2019 **Master's thesis, Department of Internal Combustion Engine Simulation.**
IAV GmbH, Chemnitz, Germany.
- Developed and executed the model method successfully to investigate the Turbine Downstream to increase the turbine pressure ratio and thus the turbine performance.
 - Effectively and efficiently performed meshing, and 3D- CFD simulations of the models using CFD-tool StarCCM+.

- 10/2018 - 03/2019 **Internship, Industrial Hydraulics Department.**
Bosch Rexroth AG, Lohr am main, Germany.
- **Optimized** the shape of hydraulic valves and pumps, and decreased the pressure drop by **18%** using the adjoint shape optimization method with CFD simulation.
- 09/2016 - 09/2017 **Design Engineer, Hydraulic Control Department.**
Bosch Rexroth (India) Pvt Ltd.
- Trained to design and test industrial hydraulic valves.
 - Created 2D/3D technical drawings with CAD programs.

Education

- 10/2017 - 09/2020 **M.Sc. Computational Engineering**
Ruhr-Universität Bochum, Germany
Abschlussnote: 1.6
- 06/2012 - 03/2016 **Bachelor of Technology in Mechanical Engineering**
Indus Universität, India
Abschlussnote: 9.22/10

IT/ EDV Knowledge

- **Programs:** MS Word, MS Excel, MS Power Point – very good.
- **Machine Learning – Frameworks:** Keras, TensorFlow, PyTorch, und Scikit-Learn – good.
- **Programming Languages:** Python – Very good, C++ - Very good, SQL – good, and Matlab – good.
- **Linear Algebra und Visualization:** Python-Library – Numpy, Pandas, Matplotlib, Seaborn – very good.
- **Web-based Visualization:** Interactive Dashboard with Plotly Python, und Dash – good.
- **Statistics:** Python, SPSS – good.
- **Data-based management:** RDBMS - PostgreSQL – good.
- **Software/Tools:** Docker - good
- **Cloud services:** AWS Elastic Beanstalk - good
- **Data accumulation und - Visualization:** Web-Scraping with Beautiful Soup – good.
- **Operating systems:** Window, Linux – very good.

Languages

- **German** – B1, Fluent in speaking and writing.
- **English** – Mother tongue.

Certifications

- Oct 2021 **IBM certified Data Science Professional**
 - [Capstone Project](#)
- May 2021 **The Complete SQL BootCamp 2021 – Udemy**

Volunteering Experience

- 02/2018 - 03/2019 **Vice President, Student Council**
Ruhr-Universität Bochum, Germany

Awards

- 2017 **Gold Medal**
Indus Universität, India
- Awarded for academic excellence in the bachelor's degree program.

Koblenz, 10/2021

